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HINTS

FOR THE MANAGEMENT OF

HOT-BEDS,

AND

DIRECTIONS

FOR THE CULTURE OF EARLY

CUCUMBERS and MELONS.

TO WHICH ARE ADDED,

BRIEF INSTRUCTIONS FOR PRUNING

WALL and ESPALIER TREES.

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HINTS

FOR THE MANAGEMENT OF

HOT-BEDS, &c.

MOST Perſons poſſeſſed of gardens attempt raiſing early cucumbers, but their attempts are not always attended with ſucceſs. Their failure is generally aſcribed, either to an expoſed ſituation, a ſterile ſoil, or the inclement temperature of the ſeaſon, while, in fact, ignorance or inattention, oftentimes both, are the cauſes which render the attempt abortive.

The following obſervations and directions partly collected from experienced gardeners, and partly the reſult of experience, will, if implicitly followed, remove every difficulty, and enable any perſon of common underſtanding, to reap in due time the fruits of his labour, and derive from his aſſiduity both profit and pleaſure.

As the following treatiſe is deſigned only for inſtruction, prolixity ſhall be avoided, and every neceſſary direction given with all poſſible conciſeneſs, and in the plaineſt language.

In order then to the ſucceſsful culture of melons and cucumbers, two things are principally to be regarded and carefully attended to, viz.

1ſt. The formation of the hot-bed.

2dly. The management of the plants.

Under theſe heads may be comprized every neceſſary inſtruction.

In reſpect to the formation of the hot-bed, I deviate ſomewhat from the common method; experience, and I flatter myſelf reaſon alſo, will warrant the innovation. In the beginning of February, a few days before you intend making your ſeed-bed, get ſome hot horſe-dung thrown in ſmall heaps, about a barrow full in each, againſt the ſtable wall; when you have thus collected a large cart load, mark out the ſize of your frame for one light in the warmeſt and leaſt expoſed part of your garden, bring out your dung, and begin your bed, ſhaking and mixing the dung well, and beating it down evenly with your fork, but do not tread it; let the bed be three inches or even half a foot wider than the frame, and between three and four feet in height; when your bed is finiſhed, put on the frame and glaſs that the bed may heat when the ſteam ariſes, which will be in two or three days; raiſe the back of the glaſs, and keep it up till the ſteam paſſes off; an opening of two or three inches is ſufficient for this purpoſe; line the back, ſides, and front of your bed with dry litter or fern, to retain the heat, and prevent the effects of wet, or cold weather. At this period it is uſual to earth the bed. I prefer a covering of dry ſaw or malt duſt, or, which is better if it can be procured, tanners bark that has been thrown up for a few days to drain; this covering ſhould be ſix inches deep. Take ſome ſmall pots filled with *dry* rich mould, plunge them into the covering, and ſhut the glaſs cloſe; when the earth in the pots is warm, plant five cucumber or melon ſeeds in each, obſerving, if your ſeeds are old and dry, to ſteep them firſt two or three hours in milk lukewarm; keep your glaſs cloſe, and cover it every night, and in ſevere weather by day, with a mat or other covering, until the ſeeds are up; then give them a little air, and, if the earth appears very dry, a little water that has been previouſly kept in the bed in a bottle, but be very careful not to chill the plants.

When the plants have ſhewn their rough leaves, have a bed like the ſeed-bed in readineſs to receive them, where they are to remain until they are planted out for good in the bed wherein they are to produce their fruit, which bed is to be prepared in the following manner: Mark out the ſpace of your intended bed, for two, three, or four lights, and allow ſix inches for the ſupport of the frame; make the bed in the ſame manner you did the ſeed-bed, and when finiſhed, raiſe a wall of turf round the back and ſides of it, which wall muſt be ten or twelve inches higher than the bed at the back part, the ſides ſloping gradually towards the front, which muſt be left open; obſerve to leave a diſtance of three feet between the turf wall and the bed, this ſpace is to be filled with dry litter. When, as before directed, the ſteam has paſſed off, this bed is to be covered three inches in depth, with dry rich mould, and under the middle of each light, raiſe an hillock of the ſame earth, nine inches high, broad at the baſe and flat at top; when theſe hillocks are ſufficiently warm, and the violent heat of the bed is abated, they will then be in a proper ſtate to receive the plants, and bring them on to their utmoſt perfection.

We are now to conſider the proper method of

MANAGING THE PLANTS

During the whole period of their growth. I have before obſerved that, as ſoon as the ſeeds are up, they muſt have air, and, if neceſſary, water too; indeed theſe elements are the principal nouriſhment of all vegetables: in the preſent caſe it is abſolutely neceſſary to regulate the admiſſion of the one, and the application of the other.

If the plants in the ſeed-bed aſſume a yellowiſh appearance, it proceeds from the too great heat of the bed, or is cauſed by the noxious ſteam ariſing from it; in the former caſe raiſe the pots a little, in the latter let out the ſteam, by tilting up one end of the glaſs an inch or two; but as in ſo doing too much cold air may be admitted, which would prove deſtructive of the plants, you are carefully to guard againſt it, by nailing to the end of the light a piece of matting to hang over the open ſpace, through which the air will paſs into the bed, ſomewhat milder than that of the ſurrounding atmoſphere. Give your plants air whenever the weather is mild, and water when the dryneſs of the earth in the pots denotes the neceſſity of it. Cover your glaſs every night, and whenever the weather is ſevere. If the air be mild, and the heat of the bed ſtrong, one good thick mat will be ſufficient; but additional covering muſt be added in proportion to the declenſion of heat and the ſeverity of cold.

When the ſecond bed is ready to receive the plants, examine the pots, and draw out the weakeſt, leaving three of the ſtrongeſt if cucumber, and two if melon plants, in each pot; plunge them in your ſecond bed, obſerving to give them air and water as before directed.

If, when your plants are removed into the ſecond bed, you apply a lining of freſh hot dung to the back and ſides of the firſt, it will afford ſufficient heat to raiſe cauliflower plants, or ſmall ſallading; and when your cucumbers are finally removed into the fruiting bed, the cauliflowers may be tranſplanted into the ſecond bed, if you line it, and remove the malt duſt, &c. putting earth in the ſtead thereof, into which the plants may be pricked, where they will attain ſufficient growth to be planted in the natural ground in April.

But to return to the cucumber and melon plants. It will about this time be neceſſary to perform an operation upon them, which, ſimple as it may appear, will greatly accelerate their producing fruit, and which is thus performed: When the two firſt rough leaves are about an inch wide, you may obſerve ſomething like a ſmall bud at the bottom of one of them, which is the top of the firſt runner, and would if not pruned run a great length without ſhewing fruit: ſo ſoon as you perceive it, pinch it carefully off, cautiouſly avoiding to injure the joint from whence it proceeds: this pruning greatly ſtrengthens the plants, and cauſes them to throw out, in a ſhort time, ſeveral bearing runners, which will produce full-grown fruit ſooner than the other would bloſſoms, if its luxuriancy were not checked.

When your plants have remained in their ſecond bed eight or ten days, you ſhould make the fruiting bed, into which, when of a proper temperature, they are to be planted in the following manner. The evening before you remove the plants, give them water ſufficient to moiſten the earth in the pots, that it may adhere to their roots; the next morning about eleven o'clock, take a pot of your ſtrongeſt plants to the fruiting bed, carefully place your fingers between the plants without injuring their ſtems, the mouth of the pot down, and by gently ſtriking it the whole contents will drop out, which is immediately to be planted in the hillock, in which a hole has been previouſly made to receive it; cloſe the earth well about the roots, and drawing a little round the ſtems, give them a little water that has ſtood ſome time in a bottle in the bed, and then proceed to plant the other hillocks in the ſame manner; when all are finiſhed, ſhut your glaſſes cloſe till the ſteam riſes, which is to be let off as before directed for the ſeed-bed.

The bed muſt be frequently examined as to its degree of heat, becauſe it frequently happens that, when it is exceſſive, the roots of the plants are ſcorched, and the earth around them burnt: ſhould a tendency this way be indicated, remove the earth that is too warm, and apply freſh, and remove as much as can be ſpared, without expoſing the roots, from the hillocks.

When all danger of ſcorching is over, cover the whole bed between the hillocks, about three inches thick with rich dry earth, and continue a ſimilar layer at intervals of two or three days, till the whole is level with the ſummits of the hillocks; but were this depth applied at once, it would chill the roots of the plants, and in all probability ſet the bed in a freſh fermentation, to the deſtruction of the plants.

Admit freſh air to the bed whenever it may be admitted with ſafety, and give the plants a little water every two or three days, taking care not to wet the leaves or ſtem; the beſt time for giving water to the plants is about noon, and, if poſſible, when the ſun ſhines. When the heat of this bed begins to decline, it will be neceſſary to renew it, which is done by lining it in the following manner: Have ready a ſufficient quantity of hot horſe-dung, remove the litter from between the ſides of the bed and the turf wall, (if the heat be not very much decreaſed, one ſide will be enough) and fill the interval with the dung in the ſame manner you made the bed; raiſe it a few inches higher than the bed, and immediately cover it three inches deep with earth, in which you may ſow any kind of ſeed; when the heat, thus reſtored, begins to cool, proceed in the ſame manner with the other ſide, or back, or line the front, by which time your fruit will be fit to cut. Remember always, that as your bed cools, the covering by night, and in ſevere weather, muſt be increaſed.

At this ſeaſon of the year, when it would prove deſtructive to admit a full current of air to the plants, and before the genial warmth of the ſun hath animated the innumerable tribes of inſects, or the induſtrious bee can gain admiſſion within your frame, an operation uſually performed by Nature through their medium, muſt at this ſeaſon be performed by art.

Cucumbers and melons produce male and female bloſſoms upon the ſame plant; but unleſs the female bloſſoms are impregnated by the *farina fœcundans*, or prolific duſt of the male, they never bring forth fruit to perfection.

The ſexual difference in plants was an early diſcovery, and it was uſual in ſeveral parts of Aſia, to bring branches of the male date-tree in bloſſom from a great diſtance, to impregnate the females, which is done by bruſhing the female branches with the male; and without this operation they would remain barren and fruitleſs. It is true that where the male and female date-trees grow together, this proceſs is unneceſſary, as the fecundating powder of the male is wafted by the breeze into the cup of the female, or depoſited there by the bees, or other inſects, that roam from flower to flower in ſearch of ſubſiſtence.

In like manner cucumbers and melons are impregnated, when expoſed to the air in the warmer months, at which time the bees alſo have free acceſs, and every bloſſom is pervaded by a ſmall agile inſect peculiar to theſe plants; but in cold weather, when cloſely covered, they are precluded from this natural impregnation, ſo that an artificial one becomes neceſſary; this method is very ſimple, though efficacious, and is thus performed:--- The day your bloſſoms open, take a healthy male flower, which is often erroneouſly called a falſe bloſſom; gather it with the ſtalk to it, hold it *by* the ſtalk, ſtrip off the flower leaves with a gentle hand, leaving only the central part, which is covered with the impregnating duſt, with which touch the central part of the female bloſſom, ſo that ſome of the duſt may adhere to it, and the whole operation will be effectually finiſhed.

The female are eaſily diſtinguiſhed from the male bloſſoms, by proceeding from the extremity of the young *fruit*, whereas the male grows upon a ſlender ſtalk, and cannot poſſibly be miſtaken for the other. Having performed this operation, and ſtrictly adhering to the preceding directions relative to air, heat, (which is always to be kept up by freſh lining the bed, removing the old ones,) &c. you will, in nine or ten days, be rewarded for your toil, by ſeeing your cucumbers arrived to perfection.

Cucumbers ſown in the beginning of February, and managed after this manner, will produce fruit fit for cutting the latter end of March in a warm ſituation and mild weather, or at fartheſt the beginning of April.

The beſt time for making a ſeed-bed for melons is in the month of March, and plants raiſed at that time will ripen their fruit in July.

You muſt not plant cucumbers and melons in the ſame bed; for in that caſe, the fruit of one kind would partake of the qualities of the other, and conſequently both be ſpoiled; which muſt appear evident from what has been ſaid in regard to the impregnation of cucumbers. And here it will not be amiſs to give this caution relative to raiſing ſeeds:---never to let two different plants of the ſame tribe remain near each other to perfect their ſeeds; as the plants raiſed from theſe ſeeds would deviate greatly from the original kind.

For inſtance:---Plants raiſed from ſeeds produced from a cauliflower that ſtands near a cabbage, or from a cabbage which is near any other plant of the braſſica tribe, &c. will be imperfect in their kind. This is not only the caſe in the ſame garden, but it alſo frequently happens, that the male duſt of one plant is brought from a conſiderable diſtance by bees, &c. and lodged in the receptacle of a female one of another, where it produces an equivocal generation; and from this ſource originates the diſappointment ſo frequently experienced by gardeners, for which the ſeedſman is, though often unjuſtly, blamed.

Melons, during their growth, require leſs water than cucumbers; once in a week or ten days will be ſufficient, if the bed be ſufficiently earthed, which for melons ought to be a foot or fourteen inches in depth. When the fruit is formed, give water very ſparingly, and place a tile under each fruit, to prevent their abſorbing too much moiſture, which would render the juices of the fruit crude and inſipid.

Cover the lights of your melon frame with matts every night till the middle of June, and defend them from the violent heat of the ſun in the middle of the day, by ſtrewing a little hay over the glaſſes. Cover up before ſunſet, and do not uncover till the ſun is riſen.

When you water your melons, let not the water (if poſſible) touch the fruit, or the ſtems of the plants; ſhut the glaſſes cloſe after watering, and guard againſt the ſun for an hour. Watering ought always to be performed on a warm day, and in mild weather give your plants air. When the melons are almoſt ripe, little or no water is required.

Laſtly; as nothing is more hurtful to melons than wet, guard them well from heavy rain; preſerve a good heat in your bed, defend it from cold air, and the intenſe heat of the mid-day ſun, but let your plants have a ſufficient ſupply of air whenever it is temperate.

MISCELLANEOUS OBSERVATIONS.

Nothing is of greater conſequence to the ſucceſsful cultivation of any vegetable, than the ſupplying it with proper nouriſhment. The ſource from whence it, derives it is the earth, and this affords it more or leſs, in proportion as it abounds with oleaginous particles.

That oil is the food of vegetables, is demonſtrable; the following ſimple experiment, were there no other proof, is concluſive, *Fertile ſoils will deflagrate with nitre, ſterile will not.** Where a ſoil does *not* naturally abound with this vegetative principle, it may be artificially communicated, and even where it *does*, it may remain inert from its tenacity; for vegetables *imbibe* their nutriment, and their abſorbent veſſels are too minute and conſtricted to allow the admiſſion of a viſcous fluid; and conſequently, without an aſſiſting ſubſtance to diſſolve and render it miſcible with water, to which the veſſels of plants *are* pervious, that ſoil which in itſelf is moſt fertile, may prove inadequate to afford a proper degree of nouriſhment, from the incapacity of the plants growing therein, to aſſimilate it. Following this hypotheſis as my guide, I always make uſe of the following compoſt for my hot-beds, which has always anſwered my moſt ſanguine expectations.

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* See HOME's Treatiſe upon Vegetation.

Take in the beginning of June a cart-load of freſh virgin earth, if it can be procured, if not, any light rich mould will do; mix it with an equal quantity of thoroughly rotten dung, and about two buſhels of finely ſifted coal-aſhes. This is to be thrown into a heap in ſome place defended from the ſun and rain, but open to the air; turn the heap frequently, chopping the dung with a ſpade as ſmall as you can; when the mixture is well incorporated, wet it frequently with all your fat pot-liquor and ſoap-ſuds, which are to be reſerved for that purpoſe. When your compoſt has imbibed a ſufficient quantity, (obſerve to turn it over frequently during the time of watering) which will be about September, throw it up into a high ridge to dry, for it muſt be dry before it is uſed; and about Chriſtmas mix with it two buſhels of quick lime in powder. Mix them well together two or three times, and paſs the mixture through a fine riddle, throw it up into a heap, and let it remain till wanted.

If this compoſt be too heavy, reduce it to a proper degree of lightneſs with fine dry coal-aſhes. The oils of the dung, the pot-liquor, and the ſoap-ſuds, are diſſolved by the lime and alkaline ſalts, and afford a rich and immediate nouriſhment.

In watering cucumbers and melons, particular care is to be obſerved in reſpect to the water made uſe of; more depends upon this article than is generally imagined. Rain water is to be preferred, if it can be procured, if not, that which approaches neareſt to it in quality. Hard running water frequently contains mineral or ſelenitic particles, which are noxious to vegetation, and therefore ſhould never be uſed, unleſs it be previouſly prepared.

The following ſimple method, which I always make uſe of, not only prevents its deleterious effects, but cauſes it to accelerate the growth of plants, affords them a great portion of nouriſhment, and produces large fruits of an excellent colour.

Fill a large caſk nearly half full, with freſh ſheep's-dung, if it can eaſily be obtained, if not, good rotten horſe-dung chopped ſmall is very little inferior. Fill up the caſk with water, and frequently ſtir the dung about in it, ſtrewing half a peck of wood-aſhes when you add the water to the dung. The aſhes helps to diſſolve the juices of the dung, renders them more fluid, and miſcible with the water; the longer it remains in the caſk, and the more frequently it is ſtirred, the better.

When you expect your plants to appear, fill two or three quart bottles with this water, put a lump of ſal-ammoniac the ſize of a nutmeg into each bottle, and keep them in the hot-bed till the chill is taken off the water, in which ſtate it muſt always be uſed, and it will never deceive your expectation, as it affords a rich nutriment to the plants as well as moiſture.

Obſerve never to ſet *freſh* cucumber or melon ſeeds, as they run into vines, and produce very few fruit. The older the ſeeds are, the better, if they retain the power of vegetating. The early prickly, and long prickly cucumbers, and the ſmall pocket, and rock cantalupe melons, are the beſt for cultivation in point of crop and flavour.

The Patagonian cucumber is excellent for making artificial mangoes. You may raiſe a pot of plants in your fruiting bed, and in May plant them in a hole under a hand-glaſs; take two or three large barrows of good hot dung, dig a trench three feet ſquare, and a foot deep, in this trench put your dung, mixing it well, &c. as directed for your hot-bed. When finiſhed, earth it a foot deep, lay on a large hand-glaſs; when it begins to heat, turn out your plants, ſet them under your glaſs, give them ſome water, and defend them from the ſun till they have taken root.

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Brief Inſtructions for Pruning WALL *and* ESPALIER TREES.

I ſhall divide fruit-trees into two claſſes, viz. ſuch as bear their fruit upon ſpurs, and ſuch as produce it upon the laſt year's or two years old branches. Apples, pears, plumbs, and cherries, belong to the firſt; apricots, nectarines, peaches, and the vine, to the latter.

In pruning trees belonging to the firſt claſs, obſerve that their fruit is produced upon ſhort natural ſpurs ſpringing from the ſides and ends of the branches, which branches continue bearing for ſeveral years, increaſing their quantity of ſpurs as they increaſe in length; their branches therefore are not to be ſhortened, but trained at their full length horizontally to the wall or eſpalier, allowing about ſix inches between each branch. The principal point to be obſerved in pruning theſe trees is, always to keep a ſufficient quantity of bearing wood, and where an old branch is decaying, to train a freſh one to ſupply its place.

Be particularly careful to preſerve all natural fruit ſpurs, excepting thoſe which proceed from the ſtump of any ſhoot you may have been obliged to ſhorten, in order to produce freſh ſhoots to ſupply a vacancy; theſe are generally unfruitful, and muſt (together with all irregular and ill-placed ſhoots) be cut out cloſe to the old wood from whence they originate.

If there is a vacant part in your tree, ſhortening one or more of the branches becomes neceſſary, in order to procure wood to fill up the void ſpace; and in this caſe obſerve, that if there is not a ſufficient number of young ſhoots for your purpoſe, you muſt ſhorten one of the ſtrongeſt to four or five buds, which will then throw out lateral ſhoots to be trained at full length for producing ſpurs, which they will do in two or three years.—— The Morella cherry is an exception to this rule, as it produces fruit upon one or two years old ſhoots, and conſequently muſt be pruned in the ſame manner as trees of the ſecond claſs, which are to be thus managed in the pruning. As the fruit of theſe trees is produced upon the ſhoots of the laſt ſummer, all old wood that does not afford a proper ſupply of them muſt be cut out, obſerving at the ſame time, that notwithſtanding the wall may appear bare, yet it will ſoon be covered with fruitful wood, if properly managed.

In pruning theſe trees, your firſt care muſt be to reſerve a plentiful ſupply of the young ſhoots produced the ſummer before, to be trained in for bearing; and if you obſerve any ſhort ſpurs, carefully to preſerve them, as they generally produce good fruit, and are frequently met with, eſpecially upon the apricot.

Cut out all ſuperfluous ſhoots, and train the branches and bearing ſhoots to the wall as horizontally as poſſible, at about ſix inches diſtance from each other, and diſpoſe them regularly, remembering to ſhorten the laſt ſummer's ſhoots, to enable them next ſummer to throw out ſucceſſional ſhoots, as the ſame ſhoots produce fruit and ſhoots for the ſucceeding year. In ſhortening, obſerve that all ſhoots ſhould, if poſſible, be cut to an eye that is likely to produce a leading ſhoot, which eye is to be diſtinguiſhed by its being long and flat, whereas the bloſſom bud or eye is round and full; if you meet with two of theſe together, you may there ſhorten, as from between them will proceed a ſhoot, which by drawing nouriſhment to it, will add to the ſize and flavour of the fruit. The length of the ſhoots muſt be determined by their ſtrength and the vigour of the tree, from ſix to fourteen inches, and five or ſix inches apart; the more vigorous the tree, remember the leſs your ſhoots muſt be ſhortened.

In pruning and training the vine, obſerve to leave the branches and bearing ſhoots at about eight or ten inches diſtance; you may train them in a horizontal or perpendicular direction. Cut away all old and ſuperfluous wood, ſhortening each ſhoot to four or five eyes or buds; cut the ſhoot ſloping behind the bud, about half an inch above it, and each ſhoot ſo ſhortened will, the next ſummer, produce four or five good ſhoots, with two or three bunches of fruit upon each. As ſoon as you have pruned any tree, immediately nail it to the wall, let all the branches and ſhoots be nailed cloſe, quite ſtrait, and at regular diſtances.

Gooſeberry and currant trees alſo require pruning; and the whole art of doing this work properly, conſiſts in keeping them clear from each other, cutting them out hollow in the middle, and removing any branches that croſs each other, or are nearer than ſix inches apart.

Short as theſe inſtructions may appear to ſome, every perſon in the leaſt converſant with the ſubjects they treat upon, muſt acknowledge them to be uſeful; and, by following the rules herein preſcribed, any perſon of moderate capacity, though totally ignorant of the ſubject, may reap profit and gain ſufficient information.

FINIS.